then over 20 000 extra deaths could have been prevented or postponed, almost doubling the mortality reduction actually achieved, consistent with older studies.[4]

Furthermore, almost two thirds of the total potential additional benefit would have come from focusing on secondary prevention and heart failure in primary care. Because absolute benefit is greater in older groups, they have the most to gain. The 2003 general medical services contract will now reward the identification of eligible patients and the creation of CHD registers in every general practice. Such incentives may substantially increase treatment uptakes. The increasing enthusiasm for chronic disease management programmes and nurse led primary care clinics focused on secondary prevention and cardiac rehabilitation should also help. The situation in 2005 may therefore be substantially better than that in 2000.

We generously assumed that CABG surgery and PTCA procedures in 2000 were increased by 80%. This was substantially more than the NSF had achieved by 2003 (some 6000 additional procedures over 1999 rates).[2] Relatively few deaths were prevented. However, revascularisation is being increasingly seen as a symptomatic intervention for improving quality of life, rather than simply for saving lives.[2]

All analytical models have limitations.[1] The IMPACT model was confined to CHD and did not explicitly consider patients with stroke or peripheral disease. Patients with diabetes were considered only in terms of their established CHD. The IMPACT model also assumed that efficacy, the mortality benefits reported in randomised controlled trials, can be generalised to effectiveness in unselected patients in clinical practice. A constant relative risk reduction, independent of the level of risk, was also assumed. Overestimation of the true treatment benefits therefore remains possible. Further explicit assumptions were required to cover deficiencies in the UK CHD data, which remain lamentably patchy and mixed.[5] Sensitivity analyses were therefore essential to examine the effect of varying these underlying assumptions and hence test the robustness of the model.[1] Maximum and minimum estimates were generally narrow. Furthermore, the relative contribution of each intervention remained remarkably consistent. This study focused on mortality reduction. Further research is now required on life years gained, symptom relief, quality of life, cost effectiveness, and the potential reduction in serious non-fatal events such as recurrent MI, stroke, or heart failure often leading to repeated hospitalisation.[2]

In conclusion, future national strategies should maximise the delivery of appropriate treatments to all eligible patients with CHD and prioritise secondary prevention and heart failure.

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Source of support: Belgin Unal was funded by an NHS North West Regional Research and Development Training Fellowship.

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Accepted 18 August 2005

REFERENCES

1 **Unal B**, Critchley J, Capewell S. Explaining the decline in coronary heart disease mortality in England and Wales, 1981–2000. *Circulation* 2004;**109**:1101–7.
2 **Department of Health**. National Service Framework for Coronary Heart Disease, 2000. www.dh.gov.uk/assetRoot/04/05/75/26/04057526.pdf (accessed 12 Jul 2005).
3 **EUROASPIRE II Investigators**. Lifestyle and risk factor management and use of drug therapies in coronary patients from 15 countries: principal results from EUROASPIRE II Euro heart survey programme. *Eur Heart J* 2001;**22**:554–72.
4 **Capewell S**, Morrison CE, McMurray JJ. Contribution of modern cardiovascular treatment and risk factor changes to the decline in coronary heart disease mortality in Scotland between 1975 and 1994. *Heart* 1999;**81**:380–6.
5 **Unal B**, Critchley J, Capewell S. Missing, mediocre, or merely obsolete? An evaluation of UK data sources for coronary heart disease. *J Epidemiol Community Health* 2003;**57**:530–5.